WARM UP:

1) Suppose that hay bales weigh an average of 46 pounds with a standard deviation of 5.8 pounds.

a) The farmer gets paid a flat fee of $50 plus $12 per lb of hay. What are the mean and std. dev. of his payment?

b) What would be the mean and std. dev. be for the **weight** of 6 hay bales?

c) Suppose that the weights of hay bales follow a normal distribution. A trailer can carry a maximum load of 300 pounds. What is the probability that the weight of 6 hay bales would exceed the maximum load?

1) μ_X =46 pounds σ_X = 5.8 pounds.

a) $\mu_{50+12(x)} = 50 + 12(46) = \$602$

$\sigma_{50+12(X)} = 12(5.8) = \$69.60$

b) $\mu_{X+X+X+X+X+X} = 46 + 46 + 46 + 46 + 46 + 46 = 276$ lbs.

$\sigma_{X+X+X+X+X+X} = \sqrt{5.8^2 + 5.8^2 + 5.8^2 + 5.8^2 + 5.8^2 + 5.8^2} = 14.207$ lbs.

c) N(276, 14.207)

P(H+H+H+H+H+H > 300) = normalcdf(300, E99, 276, 14.207) = 4.55%

WARM UP:

p. 385 #37 (not f)

p. 385 #37

$\mu_S = 1.5$
$\sigma_S = 0.3$
$\mu_L = 2.5$
$\sigma_L = 0.4$

(a) $\mu_{L-S} = 1$ oz.

(b) $\sigma_{L-S} = \sqrt{0.4^2 + 0.3^2} = 0.5$ oz.

(c) $N(1, 0.5)$

$P(S > L)$
$-S \quad -S$

$P(0 > L-S) = \text{normalcdf}(-E99, 0, 1, 0.5)$
$= 2.275\%$

(a) $\mu_{L+S} = 1.5 + 2.5 = 4$ oz.

$\sigma_{L+S} = 0.5$ oz.

(c) $N(4, 0.5)$

$P(L+S > 4.5) = \text{normalcdf}(4.5, E99, 4, 0.5)$
$= 15.866\%$